IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

6 Response 8/28/03

In re Patent Application of

FRIEDLANDER, III — Atty. Ref.: 2920-425

Appl. No. 10/042,391 — Group: 3746

Filed: January 11, 2002 — Examiner: Lulit Semunegus

For: APPARATUS AND METHOD FOR PASSIVE VENTING OF ROCKET MOTOR OR ORDNANCE CASE

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August 19, 2003

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE

This is in response to the Office Action, dated June 19, 2003, relating to the above-identified application.

Claims 1-15 are resubmitted for reconsideration by the Examiner in their original form.

Claims 1-9 and 12-15 stand rejected under 35 U.S.C. 102(b) as being anticipated by Vetter et al. (4,478,151). For the reasons set forth hereinafter, it is requested that the Examiner reconsider and withdraw this rejection.

Claim 1 and dependent claims 2-9, 12 and 13 all call for the improvement in a rocket motor or ordnance device containing propellant or explosive material enclosed in a case, which presents an explosion hazard when subjected to external heat, comprising a combustible strip secured to or formed as part of the exterior surface of the case, the strip being constructed to burn and generate sufficient heat when exposed to predetermined external heat to weaken the adjacent portion of the case, and effect rupture of the case to vent interior gases therein prior to autoignition of the propellant or explosive.

Similarly, claim 14 and dependent claim 15 call for a method of venting a rocket motor or ordnance device case containing propellant or explosive material which presents an explosive hazard when subjected to external heat, comprising providing a combustible strip on the exterior surface of the case, the strip being constructed to burn and generate sufficient heat when exposed to predetermined external heat to weaken the adjacent portion of the case and effect rupture of the case to vent interior gases therein prior to autoignition of the propellant or explosive.

The novel apparatus and method recited in Applicant's claims 1-9 and 12-15 clearly are not anticipated or rendered obvious by the teachings of Vetter et al. '151. This reference discloses the positive venting or weakening of a pressure hull in the event of an

external fuel fire such that, when the propellant grain of the ordnance ignites, the grain vents harmlessly through the weakened or open wall of the pressure hull. This is accomplished by placing a small charge of thermite or thermite-like material at predetermined locations on the interior of the pressure hull. An igniter is intimately associated with these thermite charges and the entire assembly is covered with an insulator of the type conventionally used as a rocket motor liner. This construction is completely different from Applicant's claimed construction and method wherein a combustible strip is secured to or formed as a part of the exterior surface of the case, the strip being constructed to burn and generate sufficient heat when exposed to predetermined external heat to weaken the adjacent portion of the case and effect rupture thereof to vent interior gases prior to autoignition of the propellant or explosive.

The Examiner states that Vetter et al. '151 discloses a combustible strip (15, 31) secured to or formed as part of the exterior surface of the case as shown in Fig. 6. The Examiner's attention is directed to column 4, lines 16-20 of the reference wherein it is clearly stated as follows:

> "Referring to FIG. 6, a perspective view of another embodiment of the invention is illustrated. In this embodiment strips of thermite material indicated at 30 are placed on inner surface 14 of hull 11 in a manner similar to the placement of pellets 13 and 13' in FIG. 1."

It is apparent, therefore, that Vetter et al. '151 does not disclose or even suggest Applicant's novel feature of a combustible strip secured to or formed as a part of the

exterior surface of the case to burn and vent the case when exposed to predetermined external heat, as recited in all of the claims of the present application. Applicant's novel construction and method are far simpler in construction and operation from the pressure hull penetrator of Vetter '151.

Accordingly, the rejection of claims 1-9 and 12-15 under 35 U.S.C. 102(b) as being anticipated by Vetter et al. '151 should be withdrawn.

Claims 10 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Vetter et al. '151 in view of Henderson (H 1047). Claims 10 and 11 depend from claim 1 and are not anticipated or rendered obvious by the teachings of Vetter et al. '151 for the reasons set forth herein with respect to the rejection of claims 1-9 and 12-15.

The Henderson et al. reference was cited by the Examiner for its disclosure of fragments of a warhead made from magnesium. Other than this disclosure, Henderson et al. fails to add anything of significance to the deficiencies of Vetter et al. '151 with respect to the novel limitations in Applicant's claims as described herein. Accordingly, the combined teachings of Vetter et al. '151 and Henderson et al. fail to support the rejection of claims 10 and 11 under 35 U.S.C. 103(a). Accordingly, this rejection should also be withdrawn.

In discussing the prior art made of record and not relied upon, the Examiner has described the teachings of Vetter et al. (4,458,482) as teaching a combustible strip (15) secured to or formed as part of the exterior surface of the case (Fig. 3), the strip being constructed to burn and generate sufficient heat when exposed to predetermined external

heat to weaken the adjacent portion of the case and effect rupture of the case to vent interior gases therein prior to autoignition of the propellant or explosive. The teachings of Vetter et al. '482 have been misinterpreted by the Examiner. The item 15 shown in Fig. 3 is not a combustible strip but rather is a bare patch on the casing that has not received any thermal coating protection thereon. Because the rest of the casing is coated with an insulating paint or an intumescent material, when the rocket motor undergoes external fuel fire heating, this construction will generate stress at a predetermined stress point 16 in the bare patch 15. It is apparent, therefore, that Vetter et al. '482 discloses a rocket motor that is completely different in construction and operation from that disclosed and claimed in the present application.

In view of the above remarks, it is submitted that claims 1-15 in the present application are clearly allowable over the teachings of the cited references, and formal allowance thereof is earnestly solicited.

Respectfully submitted,

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